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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DOLLINGER, MICHAEL M

ART UNIT	PAPER NUMBER
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1766

NOTIFICATION DATE	DELIVERY MODE
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01/18/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com
offserv@bipc.com

Office Action Summary	Application No. 10/562,053	Applicant(s) CLEMENT ET AL.	
	Examiner MIKE DOLLINGER	Art Unit 1766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25-36, 38 and 40-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25-36, 38 and 40-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 25-36, 38 and 40-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhodianyl (FR 2 833 603 A1) in view of Takashima et al (US 6,319,575 B1).
2. Rhodianyl discloses thermoplastic polymeric composition comprising a thermoplastic polymeric matrix M and a hyperbranched polyamide (PAHB) rheological modifier additive [page 4 lines 4-7]. The matrix M is preferably a polyester [page 11 lines 32-34] or a nylon chosen from nylon 6; nylon 6,6; nylon 4; nylon 11; nylon 12; polyamides 4-6, 6-10, 6-12, 6-36, 12-12; and copolymers and mixtures thereof [page 11 line 35 through page 12 line 2]. The PAHB is present in an amount of 1 to 20 % by mass of the total composition [page 9 lines 11-15]. The PAHB may be prepared from (I) 2,2,6,6-tetrakis(β -carboxyethyl) cyclohexanone; 4-aminoethyl-1,8-octanediamine; 1,3,5-benzene tricarboxylic acid (trimesic acid); or 2,4,6-tri(aminocaproic acid)-1,3,5-triazine [page 8 lines 26-30]; (II) ϵ -caprolactam and/or the corresponding amino acid: aminocaproic acid, para- or meta-aminobenzoic acid, 11-aminoundecanoic acid, lauryllactam and/or the corresponding amino acid, 12-aminododecanoic acid and mixtures thereof [page 8 lines 19-25]; (III) n-hexadecylamine, n-octadecylamine, n-

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dodecylamine, benzylamine or mixtures thereof [page 8 line 35 through page 9 line 2]; **and (IV)** 5-aminoisophthalic acid, 6-aminoundecandioic acid, 3-aminopimelic diacid, aspartic acid, 3,5-diaminobenzoic acid, 3,4-diaminobenzoic acid and mixtures thereof [page 8 lines 9-16]. The PAHB is a rheology modifier and will therefore reduce the viscosity with respect to a composition without the PAHB.

3. Regarding claim 40, Example 1 of Rhodianyl discloses a PAHB derived from 49.8% by weight of (III) hexadecylamine, 30% by weight of (IV) 5-aminoisophthalic acid, 1.4% by weight of (I) trimesic acid and 18.8% by weight of (II) ϵ -caprolactam [page 15 lines 22-24]. The composition may be prepared by mixing the PAHB into the molten matrix [page 13 lines 19-20] and articles may be shaped by molding, injection molding, extrusion or spinning [page 13 line 36 through page 14 line 2].

4. Regarding claim 41, the content of acid and amine terminals ranges from 10.8 to 39.4 meq/kg [Table I page 19].

5. Regarding claim 43 and 44, the composition may also include reinforcing glass fibers [page 14 lines 4-6].

6. Rhodianyl does not disclose the additive (i) of the present claims.

7. Takashima discloses a polyester resin composition produced by melt kneading a mixture comprising a polyamide resin and a polyester resin and a tricarboxylic acid compound [abstract]. The tricarboxylic acid includes trimesic acid [column 5 line 53] and is present in an amount of 0.01 to 2 parts by weight per 100 parts by weight of the polyamide/polyester mixture [column 5 lines 62-65]. Takashima teaches that the tricarboxylic acid provides improved transparency and whitening resistance at moisture

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absorbing of films, sheets and thin-wall hollow containers without deteriorating their gas barrier properties [abstract].

8. It would have been obvious to one having ordinary skill in the art the time the invention was made to have prepared a polyester and or polyamide matrix with an additive (i) and an additive (ii) according to the claims because Rhodianyl teaches that it is within the skill of the art to prepare a composition comprising a polyester and/or polyamide matrix M and a PAHB rheological modifier additive according to the claimed additive (ii) and Takashima teaches that it is within the skill of the art to add to a polyester/polyamide composition a tricarboxylic acid including trimesic acid according to the claimed additive (i). One would have been motivated to add the tricarboxylic acid of Takashima to the composition of Rhodianyl because Takashima teach that the tricarboxylic acid improves transparency and whitening resistance at moisture absorbing of films, sheets and thin-wall hollow containers without deteriorating their gas barrier properties. Absent any evidence to the contrary, there would have been a reasonable expectation of success in adding the tricarboxylic acid additive of Takashima to the composition of Rhodianyl.

Response to Arguments

9. Applicant's arguments filed 12/30/2010 have been fully considered but they are not persuasive.

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10. NOTE: Throughout Applicants' arguments the additives T2 through T4 are consistently referred to as corresponding to the second additive B of the claims. This is incorrect, T2 through T4 correspond to the first additive i of the claims.

11. Applicants argue that the claimed invention is unobvious because there are unexpected results. Specifically, Applicants believe that when the claimed additives (i) and (ii) (also called "B") are used in combination in a polyamide and/or polyester matrix that surprising and unexpected results are observed in the form of (1) higher smooth and/or notched impact resistance or (2) lower viscosity. (1) Applicants cite the inferior impact resistance characteristics of comparative examples C1-C4 as compared to the inventive example 7 and 8. (2) Applicants also cite the increased spiral length (i.e. lowered viscosity) of composition 7 and 8 as compared to comparative examples C1-C4. This argument is not convincing.

12. With regards to Applicants' allegation of unexpected results found in the present invention, Applicants are reminded that any showing of unexpected results must meet three criteria: a) the experimental data must compare the claimed invention to the analogous invention of the prior art, b) the showing must be commensurate in scope with the present claims, and c) the results must be, in fact, unexpected.

13. Regarding results set (2) above, these results are not unexpected. When either the first additive or the second additive is included in the polyamide composition, the viscosity is lowered. When both additives are included, the viscosity is lowered even more, but not in any unexpected amount. The two additives are low molecular weight

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compounds compared to the polyamide matrix and would be expected to lower the viscosity.

14. Regarding results set (1) above, the showings do not meet at least criterion b):

a. The difference between the closest prior art and the present invention is that FR '603 do not contain the first additive of claims, i.e. FR '603 does not disclose the combination of the first and second additives of the claims.

Comparative Examples C1, C4 and C5 are a good representative of the prior art (no additive; first additive; second additive, respectively) and correspond to inventive example 7.

b. Applicants are reminded that unexpected results must be shown in experimentation for the full breadth of each claimed range and genus. If no range is claimed for an amount of a component, then the range is assumed to be "greater than zero and less than 100% of the total composition" and unexpected results must be shown for the full breadth of this range as well. Applicants data show results for only one type of polyamide matrix PA66 with one type of hyperbranched additive (ii) and one type of additive (i) a combination of isophthalic acid and 2,2,6,6-tetrakis(beta-carboxyethyl)cyclohexanone.

Furthermore, Applicants have shown only one data point with respect to amounts of components. **Furthermore, the unexpected results are only observed when the compositions contain glass fiber filler. The comparative examples C7-C10 and inventive examples 11 and 12 in Table 3 of the specification do not show the unexpected impact resistance.**

- c. The results appear to be unexpected since when either additive (i) or (ii) is added to the polyamide the impact resistance decreases, but when both additives are added to the polyamide the impact resistance increases.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MIKE DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/mmd/

/RANDY GULAKOWSKI/

Supervisory Patent Examiner, Art Unit 1796